FRAMINGHAM RISK SCORE (FRS)

Estimation of 10-year Cardiovascular Disease (CVD) Risk

Date: _____

Patient's Name: _____

Step 1[1]

In the "points" column enter the appropriate value according to the patient's age, HDL-C, total cholesterol, systolic blood pressure, and if they smoke or have diabetes. Calculate the total points.

Risk Factor		Risk Points				Points
		Men		Women		
Age						
30-34		0		0		
35-39		2		2		
40-44		5		4		
45-49		6		5		
50-54		8		7		
55-59		10		8		
60-64		11		9		
65-69		12		10		
70-74		14		11		
75+		15		12		
HDL-C (mmol/L)						
> 1.6		-2		-2		
1.3-1.6		-1		-1		
1.2-1.29		0		0		
0.9-1.19		1		1		
< 0.9		2		2		
Total Cholesterol						
< 4.1		0		0		
4.1-5.19		1		1		
5.2-6.19		2		3		
6.2-7.2		3		4		
> 7.2		4		5		
Systolic Blood Pressure (mmHg)		Not Treated	Treated	Not Treated	Treated	
< 120		-2	0	-3	-1	
120-129		0	2	0	2	
130-139		1	3	1	3	
140-149		2	4	2	5	
150-159		2	4	4	6	
160+		3	5	5	7	
Smoker	Yes	4		3		
	No	0		0		
Diabetes	Yes*	3		4		
	No	0		0		
Total Points						

1 Adapted from: D'Agostino RB et al.(i). General cardiovascular risk profile for use in primary care. The Framingham Heart Study. Circ 2008;117:743-53.
2 Adapted from: Genest J et al.(i). 2009 Canadian Cardiovascular Society/Canadian guidelines for the diagnosis and treatment of dyslipidemia and prevention of cardiovascular disease in the adult. Can J Cardiol. 2009;25(10):567-579.
3 Adapted from: Anderson T et al.(i). 2012 Update of the Canadian Cardiovascular Society guidelines for the diagnosis and treatment of dyslipidemia for the prevention of cardiovascular disease in the adult. Can J Cardiol. 2013;29(2):151-167.
4 Adapted from: Pearson G et al.(i). 2021 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in Adults. Can J Cardiol. 2021;37(8):1129-1150.
‡ apoB: apolipoprotein B stat, CVD: cardiovascular disease, FRS: Framingham Risk Score, HDL-C: high-density lipoprotein cholesterol, LDL-C: low-density lipoprotein cholesterol.
* For most patients with diabetes, calculating their FRS is not needed for treatment decisions in primary prevention as a statin would be indicated in most of this population, including: age ≥ 40 yrs old **or** age ≥ 30 yrs & DM ≥ 15 yrs duration **or** microvascular disease.

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Step 2[1]

Using the total points from Step 1, determine the 10-year CVD risk* (%).

Total Points	10-Year CVD Risk (%)*	
	Men	Women
-3 or less	< 1	< 1
-2	1.1	< 1
-1	1.4	1.0
0	1.6	1.2
1	1.9	1.5
2	2.3	1.7
3	2.8	2.0
4	3.3	2.4
5	3.9	2.8
6	4.7	3.3
7	5.6	3.9
8	6.7	4.5
9	7.9	5.3
10	9.4	6.3
11	11.2	7.3
12	13.2	8.6
13	15.6	10.0
14	18.4	11.7
15	21.6	13.7
16	25.3	15.9
17	29.4	18.5
18	> 30	21.5
19	> 30	24.8
20	> 30	28.5
21+	> 30	> 30

Step 3[1]

Using the total points from Step 1, determine heart age (in years).

Heart Age, y	Men	Women
< 30	< 0	< 1
30	0	
31		1
32	1	
34	2	2
36	3	3
38	4	
39		4
40	5	
42	6	5
45	7	6
48	8	7
51	9	8
54	10	
55		9
57	11	
59		10
60	12	
64	13	11
68	14	12
72	15	
73		13
76	16	
79		14
> 80	≥ 17	15+

* Double cardiovascular disease risk percentage for individuals between the ages of 30 and 59 without diabetes if the presence of a positive history of premature cardiovascular disease is present in a first-degree relative before 55 years of age for men and before 65 years of age for women. This is known as the modified Framingham Risk Score.[3]

Step 4[2,3,4]

Using 10-year CVD risk from Step 2, determine if patient is Low, Intermediate or High risk.†

Risk Level†	Initiate Statin Treatment if:	Consider Add-on Therapy or Treatment Intensification
High FRS ≥ 20%	Consider treatment in **all** (Strong, High)	If LDL-C ≥ 2 mmol/L **or** Non-HDL-C > 2.6 mmol/L **or** ApoB ≥ 0.80 g/L on maximally tolerated statin dose
Intermediate FRS 10-19%	If LDL-C ≥ 3.5 mmol/L **or** (Strong, Moderate) If LDL-C < 3.5 mmol/L initiate if: • non-HDL-C ≥ 4.3 mmol/L **or** • ApoB ≥ 1.05 g/L **or** (Strong, Moderate) • Men ≥ 50 yrs and women ≥60 yrs with 1 additional risk factor: low HDL-C, impaired fasting glucose, high waist circumference, smoker, or hypertension, **or** with the presence of other risk modifiers: hsCRP ≥ 2 mg/L, CAC > 0 AU, family history of premature CAD, Lp(a) ≥ 100 mol/L (≥ 50 mg/dL)	If LDL-C ≥ 2 mmol/L **or** Non-HDL-C > 2.6 mmol/L **or** ApoB ≥ 0.80 g/L on maximally tolerated statin dose
Low FRS < 10%	Statins generally not indicated	N/A
Statin-indicated Conditions** (Consider treatment in all; Strong, High)		
LDL-C ≥ 5 mmol/L or non-HDL-C ≥ 5.8 mmol/L **or** ApoB ≥ 1.45 g/L (FH or genetic dyslipidemia)		If LDL-C ≥ 2.5 mmol/L **or** < 50% reduction, **or** non-HDL-C ≥ 3.2 mmol/L **or** ApoB ≥ 0.85 g/L
Most patients with diabetes: • Age ≥ 40 yrs old **or** Age ≥ 30 yrs & DM ≥ 15 yrs duration **or** Microvascular disease **Chronic Kidney Disease:** • Age ≥ 50 yrs & eGFR < 60 mL/min/1.73 m² **or** ACR > 3 mg/mmol.		If LDL-C ≥ 2.0 mmol/L **or** non-HDL-C ≥ 2.6 mmol/L **or** ApoB ≥ 0.80 g/L on maximally tolerated statin dose
Atherosclerotic Cardiovascular Disease (ASCVD): • Myocardial infarction (MI), acute coronary syndrome (ACS), **or** • Stable angina, documented coronary artery disease (CAD) using angiography, **or** • Stroke, TIA, documented carotid disease, **or** • Peripheral arterial disease, claudication, and/or ankle-brachial index (ABI) < 0.9, **or** • Abdominal aortic aneurysm (AAA) – abdominal aorta > 3.0 cm or previous aneurysm surgery		If LDL-C ≥ 1.8 mmol/L **or** non-HDL-C ≥ 2.4 mmol/L **or** ApoB ≥ 0.70 g/L on maximally tolerated statin dose

** Statin-indicated condition refers to any condition for which pharmacotherapy with statins is indicated, and consists of all documented ASCVD conditions, as well as other high-risk primary prevention conditions in the absence of ASCVD.